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The importance of support services for the effective implementation of technology in the classroom cannot be overlooked. The lack of technical support has caused expensive equipment to remain unused by classroom teachers. This article focuses on the need for on-going technical support.

# TECHNICAL SUPPORT: A Key Component for Successful Technology Integration

Max K. Frazier

Have you ever faced an important deadline, only to have a critical piece of equipment like a VCR, copier, computer, or piece of software fail to work properly? What did you do? Who did you call? How did you solve the problem so you could complete your work on time?

As the modern school has come to rely on emerging technologies to manage information and enhance student learning, the challenge of supporting the users of these technologies has become more complex and difficult. The task of integrating the wide variety of new technologies into a classroom or school is like a large puzzle; all of the pieces are vital in creating the finished product. Without the planning, training, and support in place, the integration of these new technologies can be very difficult. Adequate and timely technical support is of critical importance to the users of educational technology, but this support is often overlooked as a part of the larger puzzle of successful technology integration.

The number of computers and other emerging technologies has expanded greatly in American public schools in the last decade. These technologies have broadened and enriched the learning experiences for students, but the increased use of these technologies have created a new set of problems for schools to confront. As schools have adopted and begun to use such emerging technologies as networks, telecommunications, CD-ROM and laser disc technologies, scanners, and the Internet; teachers and administrators are faced with the question of what to do when the equipment does

not work properly, needs to be maintained, or when help is needed in managing or operating these new tools for teaching and learning.

## The Technological Infrastructure

Computers and related technology have become part of the infrastructure of the modern school. Just as the electrical and plumbing systems of the building provide necessary basic services such as lights and running water, computers too provide some of the same sorts of basic services in schools today. Attendance, record keeping for transcripts, correspondence, grade cards, lunch tickets, as well as tools for writing, creating presentations, or doing research depend on computer systems and technology.

If a pipe in the school breaks and the water system does not work correctly, we call a plumber. If the lights do not work properly, an electrician is called. Often, members of the district staff are trained and licensed professionals whose job is to maintain these plumbing and electrical systems for the schools. But what of computer systems? If software needs to be installed, maintenance done to the computer network, or questions need to be answered, is there someone who is easily and quickly accessible to do these sorts of jobs?

Technical assistance is of vital importance to computer users. Computer hardware and software companies have entire staffs devoted to answering questions and offering assistance to their customers. But often, schools overlook the importance of these services for a district or school. They may assume that the "technology teacher" can adequately handle the problems which come up. Failure to provide technical support can lead to frustration, anger, and non-use of the technology by district staff. This lack of technical support is one of the mistakes frequently made by leaders wishing to integrate technology in schools.

## Levels of Technical Support

Technical support must be available on a variety of different levels. Part of this support must be in the area of installation. Technology can be very intimidating to people. Help may be needed in setting up new equipment, adding new items to existing systems, or installing new or updated software. After the equipment or software is installed, help may be needed in configuring it so that it will work properly. Teachers and other busy professional educators do not have the time to figure out how to configure the sound board for their new CD-ROM or make sure that the new machines have been properly attached to the network. Having a technical support person available to do jobs like these is essential in making the most of new technology purchases.

Maintaining the technology within a building is another area in which support is needed. Computers must periodically be cleaned, adjustments made to equipment, or software reconfigured. When a piece of equipment fails to work, help is needed in diagnosing and, if possible, repairing the problem. This may be as simple as reinstalling system software, replacing a printer cable, or it may require a trip to a repair facility. Identifying who will drop off the malfunctioning equipment, make arrangements for a service call, and picking up repairs will minimize the time a system or item is not available for use.

Assistance is often required in solving the problems which arise in using or learning about new educational technologies. New equipment or software may not work properly when first installed or set-up. Most manufacturers do have a phone number to call to get the answers to technical questions. However, these phone calls often require long waits and some knowledge of technical matters is helpful when making these calls. Technical support personnel have the time to make these

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phone calls, wait for answers, make follow up calls, and get problems solved in a timely manner. The failure to have such personnel available to solve problems with equipment may lead to resistance among staff to adopt new and better software tools or make the most of new systems.

Support must also be available in the form of answers to the various questions which arise in the use of technology. This support comes in the form of quick answers to questions about a piece of equipment or software. Sometimes the answer to such a question can be the difference between time wasted in frustration and getting the job done. These answers need to be available on a timely basis in order to keep technology users from wasting too much time on getting the answer to a question which keeps them from getting to the task at hand.

### Technical Support Roles

Who is to provide this support for a school? A designated technology coordinator with a clearly defined job description is important in providing quality technical support. This person is responsible for establishing plans for the integration of technology in the building or district and should be charged with defining and developing a system of support for the school. In addition to a technology coordinator, a technician responsible for the maintenance and repair of equipment is very important as well. Small districts may not be able to afford to have such a person on staff, but having a designated outside technician, shop, or vendor who make service calls is an acceptable alternative. Knowing who to call when things go wrong can minimize frustration and time lost while equipment is not working.

A school can also benefit from using students to help support technology within the building. Students are often less intimidated by technology than teachers or other staff. Choosing students who show promising skills with technology and then developing these skills with additional training can produce very competent support personnel for many typical problems and tasks. These students can answer questions, do simple training with software and hardware, investigate and report on problems, install software and simple hardware, and do basic maintenance. These responsibilities can enhance student confidence and develop real on-the-job skills for these students while providing timely support to building staff. Schools often overlook the support which can be provided by well trained students as they look for solutions to the technical support puzzle.

### Concepts of Support

Two concepts which can be important to consider in developing appropriate technical support are "plug 'n play" and "hot line help". "Plug 'n play" means that teachers and students will be able to use the new technology with a minimum of anxiety and frustration. Choosing new software and equipment with the end user in mind, and doing serious evaluation of both equipment and software can help to make the choice of new products appropriate for the users. Change is often difficult for people, and adapting to new equipment or program versions can be a source of great anxiety and frustration. Choosing new items which lend themselves easily to use will help the transition to a new product seem easier.

"Hot line help" is the idea of making answers to questions or help with problems a quick and easy process. Calls to software and hardware companies can often take large amounts of time while wading through an automated voice-mail system or simply waiting for the next available person to answer your question. The frustration of waiting for 45 minutes to ask a question is often more time than the average teacher has. Technical support at the district or building level is usually much quicker and less frustrating. By making equipment and software support only a phone call and a few minutes away will make users more willing to make use of new technologies in the classroom.

In addition to having local support available, it is often helpful to train staff to do basic trouble shooting and problem solving when they encounter difficulty. Nothing is more embarrassing for a user than reporting a problem with the operation of a piece of equipment, only to have support arrive and find that the unit had not been plugged into the wall. Teaching staff to do basic trouble shooting like checking the connection to power and cabling is an important skill in helping people to understand the equipment they work with and feeling comfortable with it.

The challenge of successfully integrating the emerging technologies into the educational process is a difficult one for schools. By providing adequate technical support in a timely fashion, this task will be much easier for the teachers and staff faced with learning about and implementing the use of these technologies. Having a knowledgeable technology coordinator will help to make installation and maintenance of this technology much simpler for the users. An on-site or designated repair facility will quickly facilitate the repair of equipment problems and breakdowns. Understanding and using the concepts of "plug 'n play" and "hot line help" when choosing new software and hardware, and in providing support to users will make users more confident in using unfamiliar technologies. Making use of students to provide technical assistance will help to develop real world skills and provide timely assistance to building users. By providing quality support to users, it is possible to make the integration of technology into schools and classrooms less frustrating and painful. This support makes it possible to use these technologies to their fullest, to enhance the educational process and empower the learner to accomplish much more than was possible without the use of the emerging technologies.

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